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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/762,721	01/22/2004	Edgar N. Rudisill	SS2910USCNT1	5196

23906 7590 07/15/2005

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EXAMINER

TORRES VELAZQUEZ, NORCA LIZ

ART UNIT PAPER NUMBER

1771

DATE MAILED: 07/15/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/762,721

Applicant(s)

RUDISILL ET AL.

Examiner

Norca L. Torres-Velazquez

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 20 May 2005.
- 2a) ☒ This action is FINAL. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 76,79,81,83,86,87,89 and 93-96 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 76,79,81,83,86,87,89 and 93-96 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date 50505.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____.

DETAILED ACTION

Response to Arguments

1. Applicant's arguments filed May 20, 2005 have been fully considered but they are not persuasive.

a. Applicants have amended the independent claims 76, 79, 83 and 86 to recite the negative limitation that excludes the inclusion of a fluorocarbon additive in the polymer of the fibers having cross-sectional areas of less than about $75 \mu\text{m}^2$. Applicants refer to MPEP at section 2173.05(i) and particularly cite that "Any negative limitation or exclusionary proviso must have basis in the original disclosure. If alternative elements are positively recited in the specification, they may be explicitly excluded in the claims. Applicants refer to *In re Johnson*, 558 F.2d 1008,1019, 194 USPQ 187, 196 (CCPA 1977) that indicates that the insertion of the negation limitation is permissible. Further, applicants refer to page 16, lines 11 et seq. of the specification, wherein Applicants have listed a number of "attractive alternatives" and original claims 25-29 and 49-51 (pp.20 and 23), wherein Applicants respectively disclose adding fluorocarbons to the polymers of a sheath/core fibers and to the fibers generally.

Applicants remarks are noted, however, it is the Examiner's position that the situation *In re Johnson* and the present application are not sufficiently similar as in *In re Johnson* the alternative elements are covalently bonded entities that are part of a molecular structure of a polymer versus the present situation with relates to alternative additives that are blended with a polymer forming the fiber and are not a physical part of the structure of the polymer. The negative limitation included in the present claims is considered new matter herein as there is no concept of exclusion of a fluorocarbon additive from the polyolefin forming the fibers taught by the specification. Examples 1-37 of the present application teach meltspun PET fibers treated with a repellent finish to

give hydrophobic properties. For example, none of the Examples provide the fibers without the repellent finish. Then in another aspect, the specification provides bicomponent or polymer such as sheath-core arrangements in which the hydrophobic material may be spun into the sheath polymer to obtain the desired liquid repellency at minimal cost.

It is the Examiner's interpretation that the specification provides support for the inclusion of a fluorocarbon additive to provide liquid repellency and that a sheath-core arrangement provides an attractive alternative in the construction of the fibers since it will minimize the costs of additive materials by having them in the sheath polymer of the fiber and still providing the desired liquid repellency.

b. Applicants further note that basis for the inclusion of a meltblown fibers layer in the present invention is noted at a number of places throughout the as-filed specification and refer to page 2, lines 1-17 and page 9, lines 14-21.

It is noted that SMS fabrics are described in page 2, lines 1-17 as conventional technology used in composite or laminated products in the medical field. Page 9, lines 4-24 of the as-filed Specification are directed to the description of the present invention and refer to meltspun hardened fibers and teaches that the fiber strength of these fibers will accommodate most applications without reinforcement such as the meltblown layer in SMS. Meltblown fibers typically have lower tensile strengths than the meltspun hardened fibers of the present invention due to the lack of polymer orientation in the fibers (which is found the hardened meltspun fibers of the present invention).

Therefore, it is the Examiner's interpretation that such disclosure teaches away from the inclusion of a meltblown layer. The concept of having a material without a

reinforcement or support is further supported in the Specification on page 5, lines 29-32: “the hard yarn meltspun microfibers have sufficient strength to form a barrier fabric without the need for any type of supporting scrim thus saving the additional materials, and cost of such supporting material”. The present invention compares to the prior art in that it provides the desirable barrier and breathability properties without the need of reinforcement or support in contrast to the technology of SMS of the prior art. Therefore, the inclusion of a meltblown layer in the present invention is not enabled by the Specification.

c. With regards to the rejection of the claims under 35 U.S.C. 102(b) or 103(a) over PERKINS et al., Applicants argue that Perkins et al. disclose SMS fabric that invariably contain a fluorocarbon additive in the meltblown layer thereof.

Applicants are directed to the embodiments disclosed by the parent application of the PERKINS et al. reference, serial no. 618, 352 now Patent No. 5,145,727. In Col. 17, lines 38-42 a combination 3-9 is disclosed in which the outer layers of a three layer laminate are polypropylene spunbonded webs containing an additive which render the fiber alcohol repellant and the middle layer is a polypropylene meltblown web (with no additive). The Examiner relies on the disclosed embodiment to rebut Applicants arguments that Perkins et al. disclose SMS fabrics that invariably contain a fluorocarbon additive in the meltblown layer thereof.

d. With regards to the rejection under 35 U.S.C. 103(a) over OFOSU et al. in view of McAmish et al., Applicants reiterate their comments from previous responses in which it was pointed out that OFOSU et al. disclose the use of fiber webs made from two different polyolefin polymers that have different melt flow rates. Applicants state that in contrast, the presently claimed invention expressly requires multiple fiber layers made of

the same, single polymer, such as disclosed in Examples 41 and 42 of the present application, wherein identical plies of polypropylene fabrics of Examples 38-40 are combined (pages 14-15). Further, Applicants indicate that while Applicants *express a preference* for use of the same, single polymer such that the medical fabrics formed therefrom can be recycled into constituent monomer, they submit that those skilled in the recycling art would know that polyolefins are not broken down into their constituent monomers for recycling. Applicants provide information on recycling processes and further state that it is clear to those skilled in the art of plastic recycling do not consider polypropylenes having differing melt-viscosities to be recyclable together. Applicants submit that the polypropylenes having different melt flow rates described in Ofosu et al. are not "the same, single polymer" for the purposes of the present claims, nor for the purpose of recycling.

Applicants remarks regarding recycling have been noted and considered by the Examiner, however, the Examiner still maintains the position that the polypropylene layers of OFOSU et al. read on the presently claimed "same, single polymer" as defined by the present Specification. In response to arguments indicating that the polypropylenes having different melt flow rates (*and therefore, melt-viscosities*), as described in Ofosu et al. are not "the same, single polymer"; it is noted that the Specification of the present invention only provides support for the previously argued definition in which a single polymer is defined in terms of it being readily recycled back to constituent monomers. There is no description whatsoever of the structure or constitution of the polypropylene continuous fibers used in the examples to make the "hand-made" fabric samples.

Claim Rejections - 35 USC § 112

2. The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

3. Claims 76, 79, 81, 83, 86, 87, 89 and 93-96 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The independent claims 76, 79, 83 and 86 contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention. The negative limitation included in the present claims is considered new matter herein as there is no concept of exclusion of a fluorocarbon additive from the polyolefin forming the fibers taught by the specification. Refer to section (a) of response to arguments above. Dependent claims 81, 87, 89, 93-95 are also rejected herein.

4. Claims 81 and 87 are rejected under 35 U.S.C. 112, first paragraph, because the specification, while being enabling for a, does not reasonably provide enablement for the construction of nonwoven fabrics of meltspun hardened fibers. The specification does not enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make the invention commensurate in scope with these claims. The Specification discloses teaches that the fiber strength of the meltspun-hardened fibers will accommodate most applications without reinforcement such as the meltblown layer in SMS. Therefore, it is the Examiner's interpretation that the Specification itself teaches away from the use of a meltblown layer. (Also refer to section (b) above).

Claim Rejections - 35 USC § 103

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

6. Claims 76, 79, 81, 83, 83-87, 89, 91 and 93-96 are rejected under 35 U.S.C. 103(a) as being unpatentable over PERKINS et al. (US 5,178,932) in view of POTTS et al. (US 5,145,727).

PERKINS et al. discloses a nonwoven composite structure, which has three melt-extruded nonwoven layers. The first nonwoven is adjacent to one surface of the second nonwoven web and the third nonwoven web is adjacent to the other surface of the second nonwoven web. The second nonwoven web consists of substantially continuous and randomly deposited micro fibers having an average diameter of from about 0.1 to about 10 micrometers. At least one of the first and third nonwoven webs has been treated by topical application of at least one agent to alter or enhance the surface characteristics of the filaments in the web. The composite structure is pattern bonded by the application of heat and pressure. (Abstract) The reference teaches the use of a "thermoplastic polymer" in the formation of the three nonwoven layers and defines the term "thermoplastic polymer" to include a single polymer. (Col. 5, lines 58-64) The most preferred polyolefins are polypropylene and polyethylene. (Col. 6, lines 32-33) The reference teaches the use of fluorocarbons (Refer to Col. 7-8), to provide alcohol repellency and hydrophobicity and teaches that these additives can be applied by methods such as spraying, surface coating, printing and the like. (Col. 11, lines 53-65) The reference teaches

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the use of the additives in applications in which the nonwoven structure is to be used as a medical fabric. (Col. 11, lines 33-38) In their example, the reference teaches a structure produced from a polypropylene meltblown web having a basis weight of about 14 gsm between two polypropylene spunbonded webs with a basis weight of about 20 gsm each. The structure was treated with a perfluoroalkyl acrylic copolymer to provide it with alcohol repellent and antistatic properties. (Col. 12, lines 39-68 through Col. 13, lines 1-22; also refer to claim 8)

It is the Examiner's interpretation that the first and third layers of PERKINS et al. equate to the multiple nonwoven layers of the present invention, the second layer equates to the at least nonwoven polyolefin layer comprising fibers having cross-sectional areas of less than about $75\mu\text{m}^2$. It is noted that the diameter of the fibers in the second layer of PERKINS is from about 0.1-10 micrometers, which provides cross-section of between about $0.157\text{-}78.5\mu\text{m}^2$. [cross-section= $(3.14)(d/2)^2$] It is further noted that the reference teaches the use of fluorocarbons in the first and third spunbonded nonwoven layers. With regards to the basis weight of the fabric, it is noted that the fabric described in the example of PERKINS et al. is about 54 gsm, which falls within the range claimed herein. With regards to the limitation reciting that the multiple nonwoven layers are made of hard yarn melt spun polyolefin fibers, it is noted that the term "hard yarn fibers" is defined in the Specification of the present application as fibers that are made by quenching and drawing the fibers after they are spun so that the polymer chains are oriented within the fiber. (Page 4, lines 18-21) It is the Examiner's interpretation that the spunbond fibers as disclosed by the reference read on the presently claimed hard yarn melt spun polyolefin fibers as it is exemplified by the prior art cited in the PERKINS et al. disclosure. (Particularly, the Appel et al. references; Refer to Col. 5, lines 34-43)

Although PERKINS et al. does not explicitly teach the claimed grab tensile strength, Frazier permeability, hydrostatic head properties and cross sectional void percentage of the thermally bonded nonwoven fabric, it is reasonable to presume that these properties are inherent to the nonwoven composite structure of PERKINS et al. Support for said presumption is found in the use of like materials (i.e. a nonwoven composite with spunbond layers made from the same polymer, that are treated with fluorocarbon for repellency and a meltblown layer with fibers with similar cross-sections, the fabric being pattern bonded by the application of heat and pressure and having a basis weight within the claimed values herein). The burden is upon Applicant to prove otherwise. *In re Fitzgerald* 205 USPQ 594. In addition, the presently claimed property of a grab tensile strength in both the MD and the CD between at least about 1 N/(g/m²), normalized for basis weight, and the combinations of Frazier permeability at and hydrostatic heads claimed herein would obviously have been present once the nonwoven composite of PERKINS et al. is provided. Also the cross sectional void percentage of at least about 85 percent would obviously have been present once the product is provided. Note *In re Best*, 195 USPQ at 433, footnote 4 (CCPA 1977) as to the providing of this rejection made above under 35 USC 102. Reliance upon inherency is not improper even though rejection is based on Section 103 instead of Section 102. *In re Skoner, et al.* (CCPA) 186 USPQ 80

PERKINS et al. fails to specifically teach a structure arrangement with “at least one nonwoven layer of fibers comprising polyolefin without a fluorocarbon additive”.

POTTS et al., which is the parent application of PERKINS et al. provides teachings of a three layer fabric exemplified in Combination 3-9, which has two outer layers of polypropylene

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spunbonded web containing an additive which render the fibers alcohol repellant and a middle layer 32 of a polypropylene meltblown web. (Col. 17, lines 38-42)

Therefore, it would have been obvious at the time the invention was made to a person having ordinary skill in the art to modify the structure of PERKINS et al. and provide with a middle meltblown layer without fluorocarbon with the motivation of providing suitable constructions for medical fabrics as disclosed by POTTS et al. (Col. 17, lines 51-53).

7. Claims 76, 79, 81, 83, 86, 87, 89, 91 and 93-96 are rejected under 35 U.S.C. 103(a) as being unpatentable over OFOSU et al. (US 6,268,302 B1) in view of McAmish et al. (US 4,908,163) as stated in previous action.

OFOSU et al. is directed to a soft and strong nonwoven spunbond polyolefin fabric for use in medical products and protective covers. (Col. 1, lines 42-67) The reference teaches the use of thermal calendering in the formation of the fabric. (Col. 5, lines 1-5) The reference teaches the use of drawing to produce the fibers. (Col. 5, line 48) OFOSU et al. discloses a spunbond/spunbond (SS) laminate with a basis weight of each of the layers of 34 gsm and that both layers were made polypropylene. In their examples the reference uses polypropylene of different melt flow rate. (Columns 9-10) The reference anticipates the limitations of a bonded nonwoven fabric comprising at least one nonwoven layer of spunbond fibers and the fabric having a basis weight between about 13-125 g/m² [the basis weight of the fabric is 68 gsm when the basis weight of both layers is added]. The product of OFOSU et al. meets the limitations of a bonded nonwoven fabric with at least one nonwoven layer of spunbond fibers and meets the basis weight limitation. Further, OFOSU et al. also teaches spunbond/meltblown/spunbond embodiments in their invention. (Col. 5, lines 6-8) OFOSU et al. teaches that the fibers of their

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invention have an average diameter of from about 0.5 microns to about 50 microns. (Col. 2, lines 35-38) [The corresponding cross-section for fibers with these diameters is $0.196 - 1962.5 \mu\text{m}^2$].

While OFOSU et al. teaches the use of their fabric in medical products and protective covers, it fails to teach the use of a fluorochemical coating.

McAMISH et al. discloses a nonwoven fabric made of unreinforced micro fiber (melt-blown) webs that are suitable for use as medical fabrics. The reference teaches that for applications requiring repellency, such as for surgical gowns and drapes, the fabric can be treated further with suitable repellent chemicals. Fluorochemicals are normally employed to impart repellency. (Col. 10, lines 64-68)

It is further noted that the structure of fabric of the McAmish et al. reference is very similar to the structure of the present invention in that it is a bonded nonwoven fabric with basis weight within the ranges claimed herein. (Refer to Col. 3, lines Col 11, lines 10-13) Further, it provides grab tensile values and Frazier permeability that would read on the present application. However, the reference uses melt-blown fibers instead of spunbond fibers. (Also refer to first table on Column 15, fabric 1) Fabrics 3 and 7 of that table disclose values for fabrics that comprise spunbond web layers. (Refer to Col. 14, lines 48-51, 65-68 and first table of Col. 15)

Since both, OFOSU et al. and McAMISH et al. are directed to nonwoven fabrics, the purpose disclosed by McAMISH et al. would have been recognized in the pertinent art of OFOSU et al.

It would have been obvious at the time the invention was made to a person having ordinary skill in the art to modify the fabric the OFOSU et al. and provide with a fluorochemical

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coating with the motivation of imparting repellency and using the fabric in applications such as surgical gowns as disclosed by McAMISH et al. (Col. 10, lines 64-68).

Although OFOSU et al. and McAMISH does not explicitly teach the claimed grab tensile strength, Frazier permeability, hydrostatic head properties and cross sectional void percentage of the thermally bonded nonwoven fabric, it is reasonable to presume that these properties are inherent to the combination of OFOSU et al. and McAMISH. Support for said presumption is found in the use of like materials (i.e. layers of spunbond fibers produced by drawing with similar cross-sections, the use of thermal calendaring to form the fabric, basis weight that reads on the claimed values). The burden is upon Applicant to prove otherwise. *In re Fitzgerald* 205 USPQ 594. In addition, the presently claimed property of a grab tensile strength in both the MD and the CD between at least about 1 N/(g/m²), normalized for basis weight, and the combinations of Frazier permeability at and hydrostatic heads claimed herein would obviously have been present once the combination of OFOSU et al. and McAMISH is provided. Also the cross sectional void percentage of at least about 85 percent would obviously have been present once the product is provided. Note *In re Best*, 195 USPQ at 433, footnote 4 (CCPA 1977) as to the providing of this rejection made above under 35 USC 102. Reliance upon inherency is not improper even though rejection is based on Section 103 instead of Section 102. *In re Skoner, et al.* (CCPA) 186 USPQ 80.

Conclusion

8. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

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A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

9. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Norca L. Torres-Velazquez whose telephone number is 571-272-1484. The examiner can normally be reached on Monday-Thursday 8:00-5:00 pm and alternate Fridays.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Terrel Morris can be reached on 571-272-1478. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



Norca L. Torres-Velazquez
Primary Examiner
Art Unit 1771

July 13, 2005